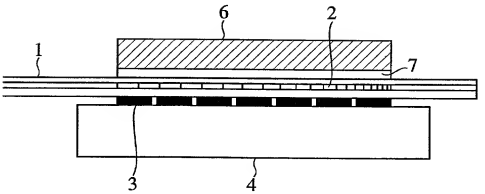
FIG.1



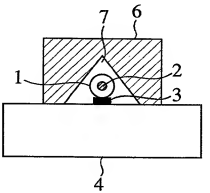


FIG.2A

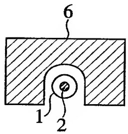


FIG.2B

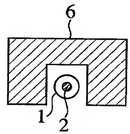


FIG.2C

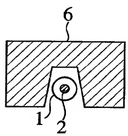


FIG.2D

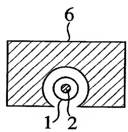


FIG.2E

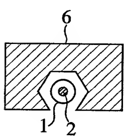


FIG.3A

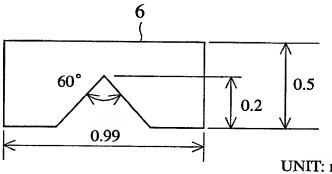


FIG.3B

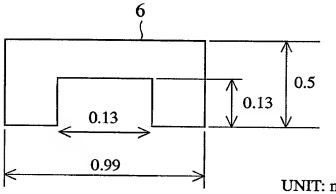


FIG.4

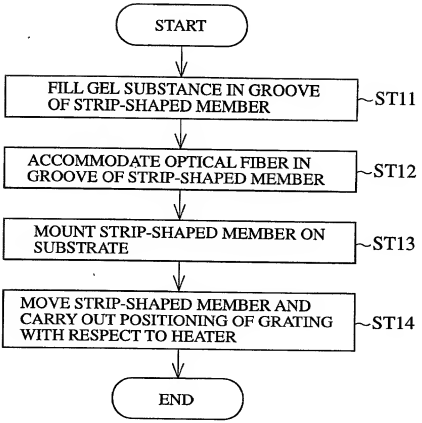

START
FILL GEL SUBSTANCE IN GROOVE OF STRIP-SHAPED MEMBER
ST11
ACCOMMODATE OPTICAL FIBER IN GROOVE OF STRIP-SHAPED MEMBER
ST12
MOUNT STRIP-SHAPED MEMBER ON SUBSTRATE
ST13
MOVE STRIP-SHAPED MEMBER AND CARRY OUT POSITIONING OF GRATING WITH RESPECT TO HEATER
ST14
END

FIG.5

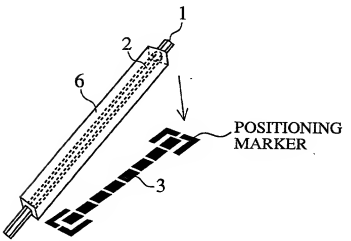

1
2
6
POSITIONING MARKER
3

FIG.6

FILLERS	TYPES	CURING CONDITIONS	HARDNESS	FEATURES
SILICON	ADHESIVE	150℃ 1 HOUR	JIS A 28	SOFT, HEAT-RESISTANCE, HIGH-ADHESIVENESS
	PASTE	NORMAL TEMPERATURE NON-CURING	–	FILLER UNRELIABLE AS SOLVENT IS VOLATILE AFTER COATING
	GEL SUBSTANCE	150℃ 1 HOUR	PENETRATION 85	CONTACT-TYPE SUPER SOFT, HEAT-RESISTANCE
EPOXY	ULTRAVIOLET CURING-TYPE ADHESIVE (CONTAINING FILLER)	ULTRAVIOLET IRRADIATION FOR 1 MINUTE	JIS D 90	SHORT CURING TIME STABILIZE MEMBERS WITH FILLER TG 160℃ OR MORE, SMALL CURING SHRINKAGE
	ULTRAVIOLET CURING-TYPE ADHESIVE (NOT CONTAINING FILLER)	ULTRAVIOLET IRRADIATION FOR 1 MINUTE	JIS D 90	SHORT CURING TIME TG 160℃ OR MORE, SMALL CURING SHRINKAGE
	TWO-PART HEAT CURING-TYPE ADHESIVE	70℃ 1 HOUR		LOW HEAT-RESISTANCE

FIG.7

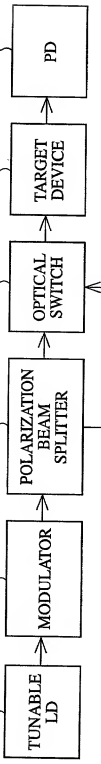

51
TUNABLE LD
52
MODULATOR
53
POLARIZATION BEAM SPLITTER
54
OPTICAL SWITCH
55
TARGET DEVICE
56
PD

FIG.8

PMD MEASUREMENT CONDITIONS	
WAVE RANGE	1548nm ~1550nm
MODULATION FREQUENCY	500MHz
DISPERSION AMOUNT OF GRATING	-250ps/nm
PMD MEAN VALUE	PMD MEAN VALUE WITHIN TRANSMISSION BAND

FIG.9

FILLER			
FILLERS	TYPES	PMD(ps) MEAN VALUE	
		BEFORE CURING	AFTER CURING
SILICON	ADHESIVE	1.7	3.7
	PASTE	1.2	5.3
	GEL SUBSTANCE	1.2	1.2
EPOXY	ULTRAVIOLET CURING-TYPE ADHESIVE (CONTAINING FILLER)	2.8	5.1
	ULTRAVIOLET CURING-TYPE ADHESIVE (NOT CONTAINING FILLER)	5.3	2.8
	TWO-PART HEAT CURING-TYPE ADHESIVE	4.8	0.9

FIG.10

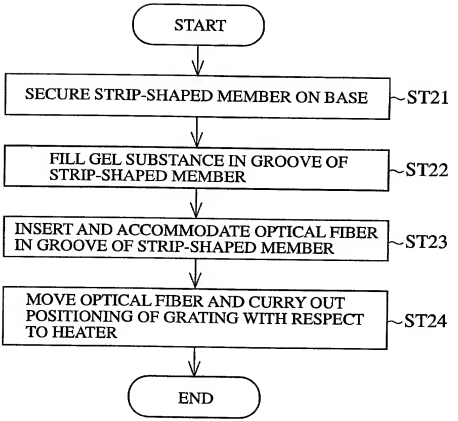

START
SECURE STRIP-SHAPED MEMBER ON BASE
ST21
FILL GEL SUBSTANCE IN GROOVE OF STRIP-SHAPED MEMBER
ST22
INSERT AND ACCOMMODATE OPTICAL FIBER IN GROOVE OF STRIP-SHAPED MEMBER
ST23
MOVE OPTICAL FIBER AND CURRY OUT POSITIONING OF GRATING WITH RESPECT TO HEATER
ST24
END

FIG.11

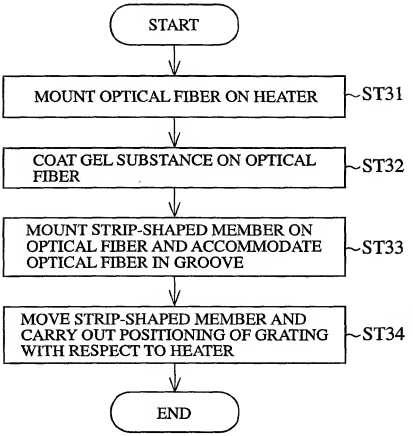


FIG.12A

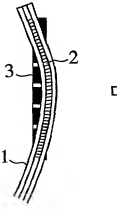


FIG.12B

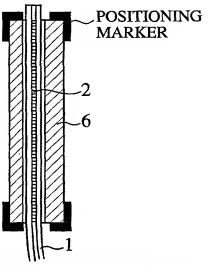


FIG.13

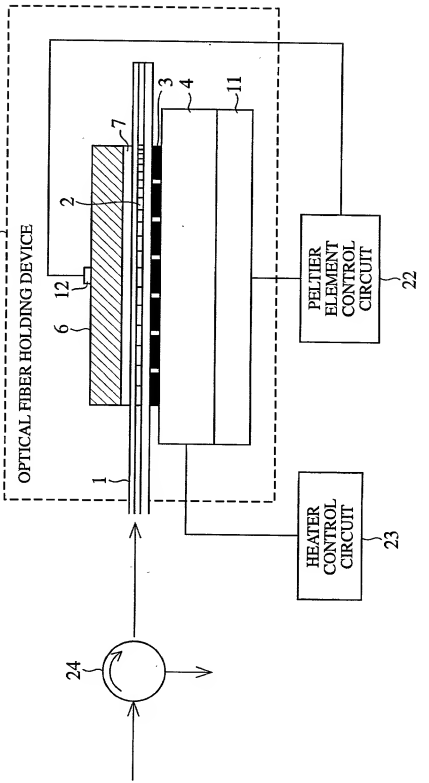

21
OPTICAL FIBER HOLDING DEVICE
1
2
3
4
6
7
11
12
24
PELTIER ELEMENT CONTROL CIRCUIT
22
HEATER CONTROL CIRCUIT
23

FIG.14
(PRIOR ART)

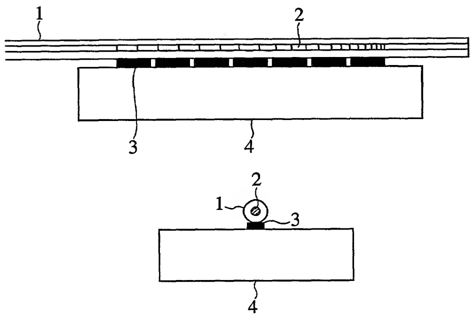
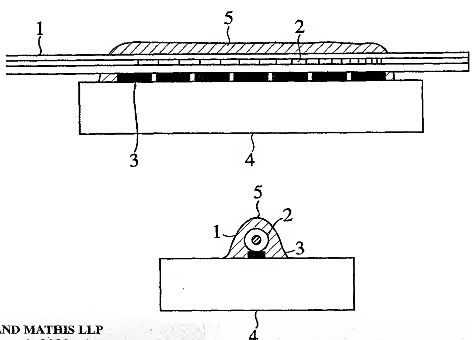


FIG.15
(PRIOR ART)



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